

performing, upon focusing operation, the positional adjustment of said first lens and said second lens after start-up of focus control, on the basis of an envelope component of reproducing signals detected by said optical pickup from said recording medium at one or more points of the cyclic movement of said at least one of said first lens and said second lens.

27. (Amended) An optical information recording/reproducing method according to claim 22, wherein the envelope component is a signal component of the reproducing signals detected by the optical pickup passed through a low band filter.

28. (Amended) An optical information recording/reproducing method according to claim 22, wherein the envelope component is a signal component of the reproducing signals detected by the optical pickup passed through a high band filter.

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 1, 2, 4-16, 18-24, and 25-28 are pending in this application. Claims 1, 15 and 22 have been amended to include the subject matter of Claims 3, 17, and 24 that have been canceled and Claims 6, 7, 16, 20, 21, 27, and 28 have been amended for better clarity based upon the changes to Claims 1, 15 and 22, all without introducing any new matter.

As Claims 1, 15, and 22 have in effect been amended to be canceled Claims 3, 17, and 24 rewritten in independent form and the changes to Claims 6, 7, 16, 20, 21, 27, and 28 are all cosmetic and do not change the scope of these claims or require further search or examination beyond that already done, entry of this amendment is clearly in order.

The outstanding Office Action presents a rejection of Claims 1, 5, 15, 19, 22, and 26 as being anticipated by Maeda et al (U.S. Patent No. 6,005,834, Maeda), and a rejection of

Claims 2, 3, 6, 7, 16, 17, 20, 21, 23, 24, 27, and 28 as being unpatentable over Maeda in view of Funada (U.S. Patent No. 4,730,294) under 35 U.S.C. § 103(a).

Initially, Applicants gratefully acknowledge the indication in the outstanding Office Action that Claims 8-14 are allowable over the prior art and that Claims 4, 18, and 25 are only objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Turning to the anticipation rejection applied to Claims 1, 5, 15, 19, 22, and 26 it is again noted that Maeda has been misinterpreted as teaching the “moving means” and corresponding “cyclically moving” function of independent rejected apparatus Claims 1 and 15 as well as the corresponding moving step of Claim 22 as to the disclosure presented at col. 5, lines 10-28 and in Figure 3 relative to elements 58 and 38.

In this regard, and as noted in the last response, the first clear error in the position set forth in the outstanding Action is the stated reliance on col. 5, lines 10-19 of Maeda that describe the interaction between the driving coil 56 and magnet 58 that supplies tracking error correction to a two-group lens that causes the two-group lens to move in a direction in which the two-group lens follows the center of a track in a direction that must lie in the tracking plane, not a direction along any optical lens axis. Accordingly, the indication of reliance upon the tracking control for tracking correction teachings in the outstanding Action is clear error.

The second clear error in the position set forth in the outstanding Action is the stated reliance on the description of focus control appearing at col. 5, lines 20-28 of Maeda. In this regard, the top of page 2 of the outstanding Action improperly reads into Maeda a disclosure of “recorded marks and spaces” that are in a further merely alleged “cyclically arrangement

of marks and spaces.” This clear error of substituting improper assumptions as to “recorded marks and spaces” for actual Maeda disclosure is compounded by the further clear error of then improperly characterizing Maeda as disclosing that these “recorded marks and spaces” (not even mentioned by Maeda) are somehow further disclosed by Maeda to not be “in the same focusing plane” as further erroneously alleged at the top of page 2 of the outstanding Action. This portion of the outstanding Action then improperly expands this clearly improper augmentation of the actual disclosure of Maeda by further alleging “marks/pits” are disclosed by Maeda.

Contrary to the above-noted improper allegations at page 2 of the outstanding Action, all that Maeda discloses at col. 5, lines 20-28 is that magnet 38 interacts with coil 58 to provide focusing correction movements of lens holder 59 so that the two-group lens held thereby will be moved in the direction of the optical axis. There is no indication here or elsewhere in Maeda of “recorded marks and spaces,” much less of these non-disclosed “recorded marks and spaces” not being “in the same focusing plane” or that “marks” can be alternatively considered to be “pits.”

Not only does Maeda not expressly indicate that any “marks” are provided at a different focusing plane from “spaces,” there is not even a reasonable inference of such an arrangement in the Maeda teaching of converging “light beams on an information recording layer and further convert light, which is reflected from the information recording layer, into a reproduction signal” at col. 4, lines 4-7. Similarly, while “digital data” is mentioned at col. 4, lines 60-64 of Maeda, it is with regard to detecting light beams reflected from one information recording face with no mention of any marks at a different focal plane than spaces. Moreover, while the use of pits are certainly known as to CD and DVD type disks, the disclosure of Maeda is not limited to such disks as it encompasses optical disks off

“magneto-optical recording type” and “phase change type” at col. 1, lines 24-28 that do not require pits.

Furthermore even in optical type disks having pit like areas and intermediate areas that are at different levels, the detection of a focus control signal does not inherently detect each of these two different levels to change the reading beam focus for each different level as clearly disclosed by the attached Greve et al U.S. Patent No. 4,135,207 at col. 3, lines 48-50 and col. 4, lines 49-53..

Clearly, nothing reasonably suggested by Maeda even hints at some manner of providing a focus servo error signal each time the read beam passes from a “mark” area at one disk level to a second disk level for a “space” to cause a cyclical focus correction as improperly alleged in the outstanding Action, much less any hint as to how to mechanically move the lens holder at the speed that would be required to match such level changes for a typical CD. Accordingly, there is clearly no basis to rewrite Maeda to create such movement.

In this regard, the PTO is again called upon to specifically point out the ACTUAL DISCLOSURE of Maeda being relied upon to teach the above-noted concepts of the disk being one having “recorded marks and spaces” that are not “in the same focusing plane” while having a “cyclically arrangement of marks and spaces.” As noted in the last response, the outstanding Action must specifically point to the disclosure relied upon in Maeda as to these alleged teachings to comply with In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (“When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference.”).

Besides the fact that Maeda is not seen to teach or suggest any cyclical movement for the two-group objective lens in the direction of the optical axis as noted above, it also does

not teach or suggests any use of reproducing signals obtained from the recording medium at one or more points of this cyclic movement as these claims also require.

Furthermore, the subject matter of cancelled Claims 3, 10, 17, and 24 that required a detected envelope component of the reproducing signals be used has been added to each of the independent claims to even better define over Maeda taken alone or with Funada. In this regard, the allegation of instantaneous up and down focusing movements for each pit elevation change clearly precludes the use of the detected envelope component of the reproducing signals as such an envelope signal cannot show the instantaneous reproduced signal change due to the change from a “recorded mark” to a “recorded space.” The outstanding Action admits that the actual changes cannot be followed at page 9 in attempting to create further fiction as to the teachings of Funada being used to modify Maeda. However, if the envelope signal were to be used instead of the actual RF signal noted, the theory that changes due to “recorded marks and spaces” will cause the required cyclical moving of at least one of the first and second lenses evaporates.

In any event, the outstanding Action further erroneously interprets the teachings of Funada at page 9 of the outstanding Action because there is no filtering or any monitoring of the amplitude of the reproduced signal taught by Funada. In this regard, 35 is a “rectifier,” not a filter, and it does not even “rectify” the information (reproduced) signal from 33. Furthermore, Funada does not teach DC offset to have any thing to do with the envelope of the reproduced information from 33, it comes from battery 38 when switched by 37 and is added to a completely different focus error signal from split-beam detector 41 different from the detectors 42 and 43 providing inputs to 33 to provide the reproduced information signal. Once again, the PTO is called upon to explain where in Funada it found the teachings alleged to be present in the outstanding Action.

Turning to Claims 2 and 6 it is noted that these claims all depend on Claim 1. In addition, it is noted that Funada in no way cures the deficiencies noted above as to Maeda and, accordingly, Claims 2 and 6 patentably define over Maeda considered alone or in any proper combination with Funada for at least the reasons that parent Claim 1 does. In addition, each of Claims 2 and 6 includes further features which are not taught or suggested by Maeda and/or Funada considered alone or together in any proper combination. Accordingly, Claims 2 and 6 also patentably define over these references because of these added features as well.

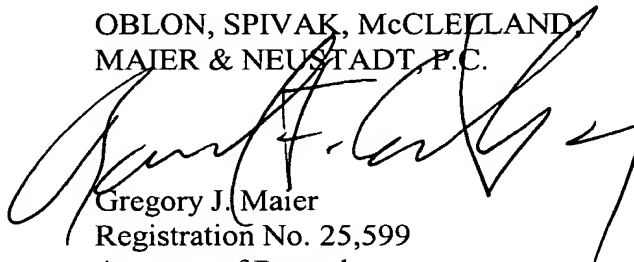
With further regard to Claims 16 and 19-21, it is noted that each of these claims depend from Claim 15. In addition, it is noted that Funada in no way cures the deficiencies noted above as to Maeda and, accordingly, Claims 16 and 19-21 patentably define over Maeda considered alone or in any proper combination with Funada for at least the reasons that parent Claim 15 does. In addition, each of Claims 16 and 19-21 includes further features which are not taught or suggested by Maeda and/or Funada considered alone or together in any proper combination. Accordingly, Claims 16 and 19-21 also patentably define over these references because of these added features as well.

Turning to Claims 23 and 26-28, it is noted that each of these claims depends from base independent Claim 22. Again, as Funada cures none of the deficiencies noted above as to Maeda and base independent Claim 22 clearly patentably defines over these references taken alone or in any proper combination, so do these claims dependent thereon. In addition, these dependent claims add further features to base independent Claim 22 and these features also clearly patentably define over anything reasonably taught or fairly suggested by either Maeda taken alone or in any proper combination with Funada. Accordingly, Claims 23 and 26-28 also patentably define over these references because of these added features as well.

In light of the foregoing and as no other issues are believed to remain outstanding relative to this application, it is respectfully submitted that this application is clearly in condition for formal allowance and an early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Registration No. 25,599
Attorney of Record
Raymond F. Cardillo, Jr.
Registration No. 40,440



22850

(703) 413-3000
Fax #: (703) 413-2220
GJM:RFC/cja
I:\atty\rfc\203648US-am2.wpd

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IN THE CLAIMS

Please amend the claims as follows:

--1. (Amended) An optical information recording/reproducing apparatus including an optical pickup for making a light beam emitted from a light source incident on a recording medium via a two-group objective lens so as to record or reproduce optical information on or from said recording medium, said two-group objective lens including a first lens disposed in the vicinity of said recording medium and a second lens disposed at a position facing to said recording medium with said first lens put therebetween, said apparatus comprising:

a moving means for cyclically moving at least one of said first lens and said second lens constituting part of said optical pickup in the direction of the optical axis thereof; and

a control means for performing, upon focusing operation, the positional adjustment of said first lens and said second lens after start-up of focus control, on the basis of an envelope component of reproducing signals [obtained] detected by said optical pickups from said recording medium at one or more points of the cyclic movement of said at least one of said first lens and said second lens by said moving means.

3. (Canceled).

6. (Amended) An optical information recording/reproducing apparatus according to claim 1, wherein [of an] the envelope component [of a reproducing signal detected by said optical pickup,] is a signal component [having] of the reproducing signals detected by the

optical pickup passed through a low band [filer is used for detection of a variation in amplitude accompanied by the adjustment of a distance between said first lens and said second lens] filter.

7. (Amended) An optical information recording/reproducing apparatus according to claim 1, wherein [of an] the envelope component [of a reproducing signal detected by said optical pickup,] is a signal component [having] of the reproducing signals detected by the optical pickup passed through a high band [filer is used for detection of a variation in amplitude resulting from an offset in focus control] filter.

15. (Amended) An optical information recording/reproducing apparatus including an optical pickup for making a light beam emitted from a light source incident on a recording medium via a primary lens disposed in the vicinity of said recording medium and at least a secondary lens so as to record or reproduce optical information on or from said recording medium, said apparatus comprising:

a first drive means for driving said primary lens in the direction of the optical axis thereof, and a second drive means for driving said secondary lens in the direction of the optical axis thereof;

a moving means for cyclically moving at least one of said primary lens and said secondary lens constituting part of said optical pickup in the direction of the optical axis thereof; and

a control means for performing, upon focusing operation, the positional adjustment of said primary lens and said secondary lens after start-up of focus control, on the basis of an envelope component of reproducing signals [obtained] detected by said optical pickup from said recording medium at one or more points of the cyclic movement of said at least one of said primary lens and said secondary lens by said moving means.

16. (Amended) An optical information recording/reproducing apparatus according to claim 15, wherein a cycle of the cyclic movement of said at least one of said primary lens and said secondary lens by said moving means is synchronized with an appearance cycle of discrete pit signal portions [which are previously, discretely] formed on said recording medium.

17. (Canceled).

20. (Amended) An optical information recording/reproducing apparatus according to claim 15, wherein [of an] the envelope component [of a reproducing signal detected by said optical pickup,] is a signal component [having] of the reproducing signals detected by the optical pickup passed through a low band [filer is used for detection of a variation in amplitude accompanied by movement of said secondary lens] filter.

21. (Amended) An optical information recording/reproducing apparatus according to claim 15, wherein [of an] the envelope component [of a reproducing signal detected by said optical pickup,] is a signal component [having] of the reproducing signals detected by the optical pickup passed through a high band [filer is used for detection of a variation in amplitude resulting from an offset in focus control] filter.

22. (Amended) An optical information recording/reproducing method which is carried out by using an optical pickup for making a light beam emitted from a light source incident on a recording medium via a two-group objective lens so as to record or reproduce optical information on or from said recording medium, said two-group objective lens including a first lens disposed in the vicinity of said recording medium and a second lens disposed at a position facing to said recording medium with said first lens put therebetween, said method comprising the steps of:

cyclically moving at least one of said first lens and said second lens constituting part of said optical pickup in the direction of the optical axis thereof; and

performing, upon focusing operation, the positional adjustment of said first lens and said second lens after start-up of focus control, on the basis of an envelope component of reproducing signals [obtained] detected by said optical pickup from said recording medium at one or more points of the cyclic movement of said at least one of said first lens and said second lens.

23. (Canceled).

27. (Amended) An optical information recording/reproducing method according to claim 22, wherein [of an] the envelope component [of a reproducing signal detected by said optical pickup,] is a signal component [having] of the reproducing signals detected by the optical pickup passed through a low band [filer is used for detection of a variation in amplitude accompanied by the adjustment of a distance between said first lens and said second lens] filter.

28. (Amended) An optical information recording/reproducing method according to claim 22, wherein [of an] the envelope component [of a reproducing signal detected by said optical pickup,] is a signal component [having] of the reproducing signals detected by the optical pickup passed through a high band [filer is used for detection of a variation in amplitude resulting from an offset in focus control] filter--